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FISH & RICHARDSON P.C.
PO BOX 1022
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/741,303
Filing Date: July 7, 2008
Appellant(s): Adam J. Weissman et al.,

John F. Conroy

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on July 7, 2008 appealing from the Office action mailed January 10, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

Claims 1-29 and 35-48 are pending in this application and were finally rejected in the Final Office Action mailed on January 10, 2008.

Claims 1-29 and 35-48 are the subject of this appeal.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejections to be Reviewed on Appeal

Claims 1-4, 8, 12-13, 15-18, 22, 26-27, 35-39, 42-43, and 44 are rejected under 35 U.S.C. § 103(a) as obvious over Woods (hereinafter "Woods", U.S. Patent Number 5,724,571) in view of Copperman et al., (hereinafter "Copperman", U.S. Patent Application Publication Number 2003/0115191).

Claims 9, 23, 40, 41, 45, 46, 47, and 48 are rejected under 35 U.S.C. § 103(a) as obvious over Woods, Copperman, and Sacco (hereinafter "Sacco", U.S. Patent Number 6,763,349).

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: Appellant's brief presents arguments relating to "objection to the specification". *This issue relates to petitionable subject matter under 37 CFR 1.181 and* ***not to appealable subject matter.*** See MPEP § 1002 and § 1201. Also note MPEP 1002.02(c) [R-2] for petitions and requests decided by the Technology Center Directors.

NEW GROUND(S) OF REJECTION

Claims 15-28, 36, and 42-46 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,724,571	Woods	3-1998
2003/0115191	Copperman	6-2003
6,763,349	Sacco	7-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims.

NEW GROUND(S) OF REJECTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 15-28, 36, and 42-46 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claim 15, the claim in lines 1-2 recites ""**computer-readable *data storage* media**". The specification of the application in paragraph [0012] recites ""Embodiments

of **computer-readable media** include, but are not limited to, an electronic, optical, magnetic, or other storage, or transmission device capable of providing a processor, such as the processor in communication with a touch-sensitive input device, with computer- readable instructions. Other examples of suitable media include, but are not limited to, a floppy disk, CD-ROM, magnetic disk, memory chip, ROM, RAM, an ASIC, a configured processor, **all optical media**, all magnetic tape or other magnetic media, **or any other medium from which a computer processor can read instructions**. **Also, various other forms of computer-readable media may transmit or carry instructions to a computer, including router, private or public network, or other transmission device or channel, both wired and wireless."**

The specification fails to limit "computer-readable data storage media" and is directed to (1) all optical media and (2) any other medium from which a computer processor can read instructions. As such, said "computer-readable data storage media" as recited in claim 15 and its dependent claims are interpreted to include wireless signals/waves and optical signals/waves, which do not fall in the four statutory categories. As such, claim 15 is rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

Claims 16-28, 36, and 42-46 depend on claim 15 and are also rejected under 35 U.S.C. § 101 by virtue of their dependency on claim 15.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-4, 8, 12-13, 15-18, 22, 26-27, 35-39, 42-43, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woods (hereinafter "Woods") (U.S. Patent Number 5724571) in view of Copperman et al. (hereinafter "Copperman") (U.S. Patent Application Publication Number 2003/0115191).

As per claim 1, Woods is directed to a computer-implemented method and teaches the limitations:

"receiving, from a user, a request for information that includes (a definition) of a concept list" (Woods, Figure 4, i.e., *Input search query 410*; Woods, Column 5 line 67 through Column 6 line 1, i.e., *a search query phrase (**consisting of one to many terms**) is input);*

"defining a target scope that that characterizes a document region to which the (concept list) is to be applied" (Wood, Column 4 Lines 47-38, i.e., *windows onto a target document – i.e., regions in a document* and Column 5 Lines 7-14);

"receiving a definition of an extraction rule, wherein the extraction rule definition comprises an extraction scope characterizes a document region to be extracted" (Wood, Column 4 Lines 47-38, i.e., *windows onto a target document – i.e., regions in a document* ; Column 5 Lines 7-14, and Figure 2 and Column 4 Lines 6367, i.e., *Figure 2 illustrates how the program modules may be organized to carry out the indexing and analysis operations that are applied to the document corpus 70 of text materials to be indexed in order to produce the term occurrences index 80 and the term/concept relationship network 110 used to support subsequent query operations"*; Column 5 Line 66 through Column 7 Line 57, i.e. *Basic Method: Ranking and Penalty Procedures, Procedure 1, Procedure 2, Procedure 2, Procedure 3, Procedure 4, Procedure 5, Procedure 6, Procedure 7, Procedure 8, Procedure 9*, and so on);

"determining a target score for the document regions of the article, wherein the score represents how well the document regions relate to the (concept list)" (Wood, Column 4 Lines 47-38, i.e., *A proximity buffer 95 is also connected to the processor 20, and is used by the processor to store positions and sizes* ***of "windows" onto a target document****--i.e.,* ***regions in a document****, of dynamically variable sizes, currently being searched by the processor for terms that match the input query terms. A window may be specified as a starting location within a target document plus a size that determines how much of the document, starting from that starting location, is to be included in a hit passage.* ***A hit passage is that portion of the document covered by such a window, and includes hit terms, i.e. the matching terms themselves*** ; Column 4 Lines 59-61, i.e., *The hit terms and* ***hit passages*** *are also stored in the proximity buffer*

95, correlated with the window information; Column 5 Lines 66 through Column 6 Lines 7, i.e., FIG. 4 corresponds to the twelve ranking and penalty procedures discussed below. At box 410, a search query phrase (consisting of one to many terms) is input, either entered by the user or requested by an executing process on the processor 20. Boxes 420-550 represent steps taken to penalize, ***rank and display the retrieved passages from the document corpus and are related to ranking procedures*** *1-12 listed below. The* ***numerals in circles in FIG. 4*** *indicate the correspondingly numbered ranking criteria;* Also note the rest of Wood reference how these scores/ranking numerals are calculated);

"applying the extraction rule to the article to determine an extract from the article, wherein the application of the extraction rule is based on the determined target score" (Woods, Column 5 Line 66 through Column 7 Line 57; Also note Figure 4 of Wood);

"outputting the extract in response to the request for information" (Wood, Figure 4, i.e., Display (store) actual hit passages (from documents) according to rank; highlight hit terms, providing hyperlinks to target text).

Woods teaches receiving from a user one or more concepts (set of concepts) as input for a request for information. As such, the method of Woods comprises a target scope that characterizes a document region to which the concepts are to be applied to. The method of Wood also teaches determining a target score of the document regions of the article, wherein the score represent how well the document regions relate to the concepts that the user inputs as a query. Wood does teach a set of concepts defining relationships among said concepts (Woods, column 5 lines 7-14, i.e., *semantic network*

of terms and concepts and *a variety of morphological, taxonomic, and semantic entailment* ***relationships;*** *Woods*, column 5 lines 32-34, i.e., *relationships between more general and more specific terms).* However, Woods does not explicitly teach "(receiving, from a user, a request for information that includes) a definition of a concept list comprising an origin concept, a relationship between the original concept and an evaluated concept, and a distance representing a strength of the relationship between the original concept and the evaluated.

On the other hand, Copperman teaches the limitation:

""a definition of a concept list comprising an origin concept list comprising an origin concept, a relationship between the origin concept and an evaluated term, and a distance representing a strength of the relationship between the origin concept and the evaluated term" (Copperman, Paragraph 0132, i.e., *As an illustrative example, suppose that* ***"TCP-IP"*** *is offered as a related feature 835 in a user session where* ***the Symptom concept node "can't connect"*** *and* ***the Object concept node "network"*** *have already been confirmed as relevant to the user query. In this example, the ranking of "TCP-IP" with respect to other displayed related features 835 is based on how often previous users selected the various related features when "can't connect" and "network" were already confirmed as concept nodes deemed relevant to the user session. In one implementation, each related feature, such as "TCP-IP", includes a list of confirmed concept nodes with which it has been previously presented. Each such confirmed concept node includes* ***an weight*** *or* ***other indicator*** *including information about how often* ***the particular related feature*** *was selected together with that particular*

confirmed concept node. For example, ***the related feature "TCP-IP" would include a weight for "can't connect" and "TCP-IP," another weight for "network" and "TCP-IP", and similar weights for the other confirmed concept nodes with which the "TCP-IP" related feature 835 has previously been presented.*** *In this example, the ranking and/or display of the "TCP-IP" related feature 835 is based on such weights. Further description of suitable use-based ranking techniques are described in the above-incorporated Copperman et al. U.S. patent application Ser. No. 09/944,636*; In the above example, "can't connect" and "network" are origin concepts. TCP/IP is the evaluated concept. Distance/weights between said concept nodes are illustrated Figure 2 of Copperman; Particularly note Paragraph 0037-0038, Figure 6, Paragraph 0061 of Copperman which teaches how said weights/relationships/distances are derived);

At the time the invention was made, it would have been obvious to a person of ordinary skill in the skill to modify the method of Woods to add the feature of using a concept list comprising an origin concept, an evaluated term, and a relationship between the origin concept and the evaluated term, as taught by Copperman, to the method of Woods, which extract documents, so that the resultant method would comprise receiving from a user a request for information that includes a definition of a concept list comprising an original concept, a relationship between the original concept and an evaluated concept, and a distance representing a strength of the relationship between the original concept and the evaluated; a target scope that characterizes a document region to which the concept list is to be applies; and determining a target score for the document region of the article, wherein the score represents how well the

document regions relate to the concept list. One would have been motivated to do so in order to classify documents according to the most pertinent concept or concepts (Copperman, Paragraph 0006).

As per claim 2, Woods in view of Copperman teaches the limitation:

"wherein applying the extraction rule comprises extracting a plurality of extracts" (Wood, Column 4, Lines 38-47).

As per claim 3, Woods in view of Copperman is directed to the limitation:

"further comprising sorting the extracts based on the extraction rules" (Wood, Column 5 Line 66 through Column 7 Line 57).

As per claim 4, Woods in view of Copperman discloses the limitation:

"further comprising selecting a first extract from the article for output based on the target score" (Woods, Column 5 Lines 66 through Column 6 Lines 7, FIG. 4, and Column 5 Line 66 through Column 7 Line 57).

As per claim 8, Wood in view of Copperman teaches the limitations:

"wherein the request for information" (Woods, Figure 4, i.e., *Input search query 410*; Woods, Column 5 line 67 through Column 6 line 1, i.e., *a search query phrase (**consisting of one to many terms**) is input*) further comprises a concept set that comprises the concept list (Copperman, Paragraph 0132, i.e., *each related feature,*

such as "TCP-IP", includes ***a list of confirmed concept nodes*** *with which it has been previously presented*) and a second concept" (In the method of Wood in view of Copperman, any concept as employed in Wood's method could be the second concept).

As per claim 12, Woods in view of Copperman teaches the limitation:

"wherein the document region characterized by the target scope comprises an article, a sentence, or a term" (Woods, Column 4 Lines 48-62 and Column 7 Lines 13-25).

As per claim 13, Woods in view of Copperman teaches the limitation:

"wherein the document region characterized by the extraction scope comprises an article, a sentence or a term" (Wood, Column 4 Lines 48-62 and Column 7 Lines 13-25).

Claim 15 is essentially the same as claim 1 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 16 is essentially the same as claim 2 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 17 is essentially the same as claim 3 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 18 is essentially the same as claim 4 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 22 is essentially the same as claim 8 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform

operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 26 is essentially the same as claim 12 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 27 is essentially the same as claim 13 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

As per claim 35, Woods in view of Copperman teaches the limitation:

"wherein receiving the definition of the extraction rule further comprises receiving a definition of a sort order in which extracts are to be sorted for output" (Wood, Column 11 Lines 23-26, i.e., *after which all of the **hit passages** that have been found are **sorted** by their net overall penalty*; Wood, Column 13 Lines 26-30, i.e., *At box 530, the processor 20 fills the output buffer with the **sorted list of query hits**, in a procedure detailed in FIG. 5A and Section 2F below*).

Claim 36 is essentially the same as claim 35 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

As per claim 37 Woods in view of Copperman teaches the limitation:

"wherein the distance comprises a numeric representation of the strength of the relationship between the origin concept and the evaluated concept" (Copperman, Paragraph 0060, i.e., *Each node in these derived groups captures a relevant relationship between and/or among concept nodes in the corresponding primary groups;* Paragraph 0061, i.e., *In one example, the primary groups can be conceptualized as vectors and each derived group can be conceptualized as a translation matrix between two primary group vectors, as illustrated in the drawing of FIG. 6. In this example, the individual elements within the translation matrix capture relationships between corresponding concept nodes of the primary groups. In one example, the individual translation matrix elements are binary valued* ***(e.g., a "1" if the activity and object are related, and a "0" if no relevant relationship exists between the activity and object****). In another example, the individual matrix elements each take on a particular value (e.g., integer, float, etc.) indicating a strength assigned to the relationship. In a*

further example, the individual matrix element values are normalized to a reference value).

As per claim 38 Woods in view of Copperman teaches the limitation:

"wherein the relationship comprise one of "is a product of", "is a part of", or "has part" (Wood, Column 5 Lines 37-44, i.e. *This operation also makes use of a semantic network of semantic entailment relationships 150 composed of a general purpose entailments database 160 of semantic entailment relationships (i.e., **relationships between a term or concept and other terms or concepts that entail or imply that term**) that hold between general words and concepts of English and/or some other natural language;* Column 8 Lines 18-20, i.e., *Thus, "**bird**" entails "**animal**" and "**plumage**" entails "**bird**";* Copperman, Paragraph 0054, i.e., *Because concept nodes may as evidence several **synonyms**, the retrieved documents in play may not include the exact user query terms, but may instead include synonyms to such user query terms;* Copperman, Paragraph 0055, i.e., *The guided search terms present concepts that are related to the concepts in play;* Copperman Paragraph 0057, i.e., *To further illustrate the above example, for a CRM content provider for guiding a customer of a software package to appropriate documentation about its use, concept nodes A1, A2, . . . , AN correspond to relevant activities (e.g., **"backup," "install,"** etc.), concept nodes O1, O2, . . . , ON correspond to those relevant objects that aren't more specifically identified as products (e.g., **"laser printer," "server,"** etc.), concept nodes S1, S2, . . . , SN correspond to relevant symptoms (e.g., **"crash," "error,"** etc.), and concept nodes*

P1, P2, . . . , PN correspond to products (which may include goods and/or services, e.g., "WordPerfect," "Excel," etc.)).

As per claim 39, Woods in view of Copperman teaches the limitation:

"wherein the origin concept comprises at least one search term" (Copperman, Paragraph 0132, i.e., *"network"* is both a search term and a origin concept).

Claim 42 is essentially the same as claim 37 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 43 is essentially the same as claim 38 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 44 is essentially the same as claim 39 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform

operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

5. Claim 5, 6, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woods in view of Copperman and further in view of Talib et al. (hereinafter "Talib", U.S. Patent Application Publication Number 2001/0049674).

Referring claims 5, Woods in view of Copperman does not explicitly teach the limitation: "receiving a target score formula for determining the target score".

Talib teaches the limitation: "receiving a target score formula for determining the target score" (Talib, Paragraphs 0170-0171).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Woods in view of Copperman to add the feature of employing a target score formula as taught by Talib to the method of Woods in view of Copperman so that, in the resultant method, the target rules would further comprise a target definition and a target score formula. One would have been motivated to do so in order to *provide users with a multiple-taxonomy, multiple category search engine that allows users to search for records* (Talib, Paragraph 0043).

Referring to claim 6, Wood in view of Copperman and further in view of Talib teaches the limitation:

"determining the target score comprises using the target sc ore formula" (Talib, Paragraph 0043).

Claim 19 is essentially the same as claim 5 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 20 is essentially the same as claim 6 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

6. Claim 7, 10, 11, 14, 21, 24, 25, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woods in view of Copperman and further in view of Fernley et al. (hereinafter "Fernley")(U.S. Patent Application Publication Number 2002/0174101).

Referring to claim 7, Woods in view of Copperman does not explicitly disclose the limitation: "comprises a gist defined as a vector of weighted concepts."

Fernley teaches the limitation "a gist defined as a vector of weighted concepts" (Fernley, Paragraph 101, i.e., *The new summarizing method provides a phrase*

signature comprising ***an ordered set of weighted keywords*** *representing the `average of the phrases contained within the document`. It is believed that this method provides for each document, an indication of the major scope or `* ***gist****` of its contents;* Note that weighted keywords are weighted concepts; Also note Figure 1 of Fernley and Paragraphs 102-0106, a method for obtaining vectors of weighted concepts is described step by step).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Woods in view of Copperman to add the feature of generating a gist of a document as taught by Fernley to the method of Woods in view of Copperman so that, in the resultant method, the request for information would comprise a gist defined as a vector of weighted concepts (a concept set or a gist or both). One would have been motivated to do so in order to *provide a sufficiently specific method of document retrieval, particularly when applied to a set of large documents with broad semantic content* (Fernley, Paragraph 0012).

Referring to claim 10, Woods in view of Copperman and further in view of Fernley teaches the limitation:

"wherein the gist comprises a user-defined gist" (Fernley, Paragraphs 0100-0104). Note that in neural network learning rules, user feedback/input is always present. Therefore, Fernley's gist is user-defined.

Referring to claim 11, Wood in view of Copperman and further in view of Fernley is directed to the limitation:

"wherein the gist comprises a calculated gist of a document region" (Fernley, Paragraphs 0100-0104 and Paragraph 0011). Note that in neural network learning rules, user feedback/input is always present and Fernley's gist is calculated using neural network methods. Wood teaches extracting document regions. Therefore, Wood in view Fernley teaches a calculated gist of a document region.

Referring to claim 14, Wood in view of Copperman and further in view of Fernley is directed to the limitation:

"preprocessing the article, wherein preprocessing comprises:

"determining at least one concept associated with the article and determining a gist of the article" (Fernley, Paragraphs 0100-0104 and Paragraph 0011).

Claim 21 is essentially the same as claim 7 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 24 is essentially the same as claim 10 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media

containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 25 is essentially the same as claim 11 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 28 is essentially the same as claim 14 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

7. Claim 9, 23, 40, 41, 45, 46, 47, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woods in view of Copperman and further in view of Sacco (hereinafter "Sacco", U.S. Patent Number 6763349).

Referring to claim 9, Woods in view of Copperman teaches the limitation "a second concept" (as cited Wood in claim 8 above) but Woods in view of Copperman

does not explicitly disclose the limitation: "wherein the second concept comprises a product of set operations on two or more other concepts."

On the other hand, Sacco teaches the limitation:

"wherein the second concept comprises a product of set operations on two or more other concepts" (Sacco, Column 2 Lines 5-8 and Column 8, Lines 15 through Column 3 Line 32).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Wood in view of Copperman to add the feature of using set operations on concepts, as taught by Sacco, to the method of Woods in view of Copperman so that, in the resultant method, the second concept would be the product of set operations on two or more concepts. One would have been motivated to do so in order to obtain *reduced taxonomy, which derived from the original taxonomy by pruning the concepts* (Sacco, Column 2 Lines 5-8).

Claim 23 is essentially the same as claim 9 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

As per claim 40, Wood in view of Copperman and further in view Sacco teaches the limitation:

"wherein the concept set further comprises at least one set operation" (Sacco, Column 2 Lines 5-8 and Column 8, Lines 15 through Column 3 Line 32).

As per claim 41, Wood in view of Copperman and further in view of Sacco teaches the limitation:

"wherein the set operation comprises one of "AND", "OR", and "NOT". (Sacco, Column 8 Lines 25-35)

Claim 45 is essentially the same as claim 40 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

Claim 46 is essentially the same as claim 41 except that it set forth the claimed invention as an article comprising one or more computer-readable data storage media containing program code operable to cause one or more machines to perform operations rather than a computer-implemented method and rejected for the same reasons as applied hereinabove.

As per claim 47, Wood in view of Copperman and further in view Sacco teaches the limitations:

"receiving, from a user, a request for information" (Woods, Figure 4, i.e., *Input search query 410*; Woods, Column 5 line 67 through Column 6 line 1, i.e., *a search query phrase (**consisting of one to many terms**) is input)* "that describes two or more concept lists" (Wood in view of Copperman as applied to claim 1 and 8 above. Wood in view of Copperman receives information describes two or more concept lists) "wherein each concept list is defined by an original concept, a relationship between the original concept and an evaluated concept, and distance representing a strength of the relationship between the origin concept and the evaluated concept" (Copperman, Paragraph 0132, i.e., *As an illustrative example, suppose that **"TCP-IP"** is offered as a related feature 835 in a user session where **the Symptom concept node "can't connect"** and **the Object concept node "network"** have already been confirmed as relevant to the user query. In this example, the ranking of "TCP-IP" with respect to other displayed related features 835 is based on how often previous users selected the various related features when "can't connect" and "network" were already confirmed as concept nodes deemed relevant to the user session. In one implementation, each related feature, such as "TCP-IP", includes a list of confirmed concept nodes with which it has been previously presented. Each such confirmed concept node includes **an weight** or **other indicator** including information about how often **the particular related feature** was selected together with that particular confirmed concept node. For example, **the related feature "TCP-IP" would include a weight for "can't connect" and "TCP-IP," another weight for "network" and "TCP-IP", and similar weights for the other confirmed concept nodes with which the "TCP-IP" related feature 835***

has previously been presented. *In this example, the ranking and/or display of the "TCP-IP" related feature 835 is based on such weights. Further description of suitable use-based ranking techniques are described in the above-incorporated Copperman et al. U.S. patent application Ser. No. 09/944,636*; In the above example, "can't connect" and "network" are origin concepts. TCP/IP is the evaluated concept. Distance/weights between said concept nodes are illustrated Figure 2 of Copperman; Particularly note Paragraph 0037-0038, Figure 6, Paragraph 0061 of Copperman which teaches how said weights/relationships/distances are derived), "wherein the two or more concept lists are combined using an operation to define a target definition that is to be detected" (Sacco, Column 2 Lines 5-8 and Column 8, Lines 15 through Column 3 Line 32) "to define a target definition that is to be detected" (Wood, Column 4 Lines 47-38, Column 5 Line 66 through Column 7 Line 57; Note that Woods in view of Copperman teaches two or more concept lists);

"receiving a description of a document region targeted for extraction" (Wood, Column 4 Lines 47-38);

"assessing a document" (Wood, Figure 4);

"based on the target definition and the document regions targeted for extraction" (Wood, Column 4 Lines 47-38, Column 5 Lines 7-14, Column 5 Line 66 through Column 7 Line 57) "extracting one or more regions of the accessed document ; and making the extracted regions available for output in response to the request for information" (Wood Figure 4).

As per claim 48 Wood in view of Copperman and further in view of Sacco teaches the limitation:

"wherein the origin concepts each comprises a lexical concept defined a by a group of related words and relationships with related concepts" (Wood in view of Copperman as applied to claim 1 and 8 above. Wood in view of Copperman receives information describes two or more concepts) "wherein a concept defined through a collection of related words" (Wood, Column 5 Lines 37-44, i.e. *This operation also makes use of a semantic network of semantic entailment relationships 150 composed of a general purpose entailments database 160 of semantic entailment relationships (i.e.,* ***relationships between a term or concept and other terms or concepts that entail or imply that term****) that hold between general words and concepts of English and/or some other natural language;* Column 8 Lines 18-20, i.e., *Thus, "****bird****" entails "****animal****" and "****plumage****" entails "****bird****";* Copperman, Paragraph 0054, i.e., *Because concept nodes may as evidence several* ***synonyms****, the retrieved documents in play may not include the exact user query terms, but may instead include synonyms to such user query terms;* Copperman, Paragraph 0055, i.e., *The guided search terms present concepts that are related to the concepts in play;* Copperman Paragraph 0057, i.e., *To further illustrate the above example, for a CRM content provider for guiding a customer of a software package to appropriate documentation about its use, concept nodes A1, A2, . . . , AN correspond to relevant activities (e.g.,* ***"backup," "install,"*** *etc.), concept nodes O1, O2, . . . , ON correspond to those relevant objects that aren't more specifically identified as products (e.g.,* ***"laser printer," "server,"*** *etc.), concept nodes*

*S1, S2, . . . , SN correspond to relevant symptoms (e.g., **"crash," "error,"** etc.), and concept nodes P1, P2, . . . , PN correspond to products (which may include goods and/or services, e.g., "WordPerfect," "Excel," etc.).*

8. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woods in view of Copperman and further in view of Ukrainczyk et al. (hereinafter Ukrainczyk, U.S. Patent Application Publication Number 2002/0022956).

As per claim 29, Woods in view of Copperman does not explicitly teach the limitation: "wherein the origin concept further comprises a group of related words, relationships with other concepts, the strengths of the relationships, and statistics regarding the usage of the origin concept in a language".

Ukrainczyk teaches the limitation:

"wherein the origin concept further comprises a group of related words, relationships with other concepts, the strengths of the relationships, and statistics regarding the usage of the origin concept in a language" (Paragraphs 0030, i.e., *The matrix values are attributes of the relationship between features and concepts, including feature frequency data determined by calculating the number of times the feature occurred in documents tagged to that concept node (count), and assigning a value representative of the strength of association between the feature and the concept (weight)*). Note that said features are also concepts.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Woods in view of Copperman to add the feature of employing a group of related words, relationships with other concepts, the strength of the relationships, and statistics about the concept usage in a language, as taught by Ukrainczyk in the art of document extraction and classification, to the method of Woods in view of Copperman so that in the resultant method the concept will be defined by a group of related words, relationships with other concepts, the strength of the relationships, and statistics about the concept usage in language. One would have been motivated to do so in order to provide *an effective method for classifying text* using *a statistical model* and also because frequency of terms, relationship among/between terms and strength of said relationships are commonly used in the art of document classification, document extraction and document clustering.

(10) Response to Arguments

Referring to claims 1 and 15 Appellant argued that "*Thus, the claims encompass the situation where a user submits a search query defined by a concepts, and the relationship between those concepts, rather than by a mere collection of terms. In contrast, requests for information in Woods and Copperman do not include these features"* (Appellant's argument, page 9 of the brief, second and third paragraphs), that "*neither Woods' single search query phrase, nor Copperman's initial search query and any subsequently selected "related features", describe or suggest requests for information that include a definition of concept list encompassing an origin concept, a*

relationship between the origin concept and an evaluated concept, and a distance representing the strength of the relationship between the origin concept and the evaluated concept, and a target scope that characterizes a document region to which the concept list is to be applied , as recited in claim 1 and 15" (Appellant's argument, page 10 of the brief, second paragraph), and that "*Also, the "related features" received during Copperman's iterative, guided search process are not requests for information that include a definition of a concept list comprising an origin concept, a relationship between the origin concept and an evaluated concept, and a distance representing a strength of the relationship between the origin concept and the evaluated concept, as recited"* (Appellant's argument, page 13 of the brief, last paragraph).

In response, it is pointed out that Woods in view of Copperman (particularly Copperman) teaches *"a user submit a search query defined by concepts and the relationship between those concepts"* (Woods, Figure 4, i.e., *Input search query 410*; Woods, Column 5 line 67 through Column 6 line 1, i.e., *a search query phrase* (***consisting of one to many terms***) *is input;* Woods, column 5 lines 7-14, i.e., *semantic network of terms and concepts* and *a variety of morphological, taxonomic, and semantic entailment* ***relationships;*** *Woods*, column 5 lines 32-34, i.e., *relationships between more general and more specific terms;* Copperman, Paragraph 0132, i.e., *As an illustrative example, suppose that* ***"TCP-IP"*** *is offered as a related feature 835 in a user session where* ***the Symptom concept node "can't connect"*** *and* ***the Object concept node "network"*** *have already been confirmed as relevant to the user query. In this example, the ranking of "TCP-IP" with respect to other displayed related features 835 is based on how often previous users selected the various related features when "can't*

connect" and "network" were already confirmed as concept nodes deemed relevant to the user session. In one implementation, each related feature, such as "TCP-IP", includes a list of confirmed concept nodes with which it has been previously presented. Each such confirmed concept node includes ***an weight*** *or* ***other indicator*** *including information about how often* ***the particular related feature*** *was selected together with that particular confirmed concept node. For example,* ***the related feature "TCP-IP" would include a weight for "can't connect" and "TCP-IP," another weight for "network" and "TCP-IP", and similar weights for the other confirmed concept nodes with which the "TCP-IP" related feature 835 has previously been presented.*
In this example, the ranking and/or display of the "TCP-IP" related feature 835 is based on such weights. Further description of suitable, use-based ranking techniques are described in the above-incorporated Copperman et al. U.S. patent application Ser. No. 09/944,636; In the above example, "can't connect" and "network" are origin concepts. TCP/IP is the evaluated concept. Distance/weights between said concept nodes are illustrated Figure 2 of Copperman; Particularly note Paragraph 0037-0038, Figure 6, Paragraph 0061 of Copperman which teaches how said weights/relationships/distances are derived). In addition, Woods in view of Copperman teaches "*a target scope that characterizes a document region to which the concept list is to be applied"* (Woods, Column 4 Lines 47-38, i.e., *windows onto a target document – i.e., regions in a document* and Column 5 Lines 7-14); "Woods, Column 4 Lines 47-38, i.e., *windows onto a target document – i.e., regions in a document* ; Woods Column 5 Lines 7-14, and Figure 2 and Column 4 Lines 6367, i.e., *Figure 2 illustrates how the program modules may be organized to carry out the indexing and analysis operations that are applied to*

the document corpus 70 of text materials to be indexed in order to produce the term occurrences index 80 and the term/concept relationship network 110 used to support subsequent query operations"; Woods Column 5 Line 66 through Column 7 Line 57, i.e. *Basic Method: Ranking and Penalty Procedures, Procedure 1, Procedure 2, Procedure 2, Procedure 3, Procedure 4, Procedure 5, Procedure 6, Procedure 7, Procedure 8, Procedure 9*, and so on); Woods, Column 4 Lines 47-38, i.e., *A proximity buffer 95 is also connected to the processor 20, and is used by the processor to store positions and sizes* ***of "windows" onto a target document****--i.e.,* ***regions in a document****, of dynamically variable sizes, currently being searched by the processor for terms that match the input query terms. A window may be specified as a starting location within a target document plus a size that determines how much of the document, starting from that starting location, is to be included in a hit passage****. A hit passage is that portion of the document covered by such a window, and includes hit terms, i.e. the matching terms themselves*** ; Woods Column 4 Lines 59-61, i.e., *The hit terms and* ***hit passages*** *are also stored in the proximity buffer 95, correlated with the window information; Column 5 Lines 66 through Column 6 Lines 7, i.e., FIG. 4 corresponds to the twelve ranking and penalty procedures discussed below. At box 410, a search query phrase (consisting of one to many terms) is input, either entered by the user or requested by an executing process on the processor 20. Boxes 420-550 represent steps taken to penalize,* ***rank and display the retrieved passages from the document corpus and are related to ranking procedures*** *1-12 listed below. The* ***numerals in circles in FIG. 4*** *indicate the correspondingly numbered ranking criteria;*

Also note the rest of Wood reference how these scores/ranking numerals are calculated).

Appellant argued that *"Applicant respectfully disagrees and submits that a multi-term search query is not a definition of concept list"* (Appellant's argument, page 11 of the brief, second paragraph) and that "*since the contention that a multi-term search query forms a "definition of a concept list" is inconsistent with both applicant's specification and the cited reference, it is not reasonable. Accordingly, an obviousness rejection on this basis cannot be sustained"* (Appellant's argument, page 12 of the brief, second paragraph).

In response it is pointed out that Woods in view of Copperman teaches "a definition of concept list" (Woods, Figure 4, i.e., *Input search query 410*; Woods, Column 5 line 67 through Column 6 line 1, i.e., *a search query phrase (**consisting of one to many terms**) is input)* comprising an origin concept list comprising an origin concept, a relationship between the origin concept and an evaluated concept, and a distance representing a strength of the relationship between the origin concept and the evaluated concept" (Copperman, Paragraph 0132, i.e., *As an illustrative example, suppose that **"TCP-IP"** is offered as a related feature 835 in a user session where **the Symptom concept node "can't connect"** and **the Object concept node "network"** have already been confirmed as relevant to the user query. In this example, the ranking of "TCP-IP" with respect to other displayed related features 835 is based on how often previous users selected the various related features when "can't connect" and "network" were already confirmed as concept nodes deemed relevant to the user session. In one implementation, each related feature, such as "TCP-IP", includes a list of confirmed*

concept nodes with which it has been previously presented. Each such confirmed concept node includes ***an weight*** *or* ***other indicator*** *including information about how often* ***the particular related feature*** *was selected together with that particular confirmed concept node. For example,* ***the related feature "TCP-IP" would include a weight for "can't connect" and "TCP-IP," another weight for "network" and "TCP-IP", and similar weights for the other confirmed concept nodes with which the "TCP-IP" related feature 835 has previously been presented.*** *In this example, the ranking and/or display of the "TCP-IP" related feature 835 is based on such weights. Further description of suitable, use-based ranking techniques are described in the above-incorporated Copperman et al. U.S. patent application Ser. No. 09/944,636*; In the above example, "can't connect" and "network" are origin concepts. TCP/IP is the evaluated concept. Distance/weights between said concept nodes are illustrated Figure 2 of Copperman; Particularly note Paragraph 0037-0038, Figure 6, Paragraph 0061 of Copperman which teaches how said weights/relationships/distances are derived. Note that Woods also teaches a set of concepts defining relationships among said concepts (Woods, column 5 lines 7-14, i.e., *semantic network of terms and concepts* and *a variety of morphological, taxonomic, and semantic entailment* ***relationships;*** *Woods*, column 5 lines 32-34, i.e., *relationships between more general and more specific terms)*).

Appellant also argued that "*Nothing in Copperman would lead one of ordinary skill to receive, from a user, requests for information that include a definition of origin concept and an evaluated concept, and a distance representing a strength of the relationship between the original concept and the evaluated concept"* (Appellant's

argument, page 12 of the brief, third paragraph), that "*Even if Woods and Copperman were combined, one of ordinary skill would not have arrived at the recited subject matter*" (Appellant's argument, page 17 of the brief, first paragraph).

In response, it is responded that one of ordinary skill in the art would be led to combine the teachings of Woods and Copperman because one would have been motivated to do so in order to classify documents according to the most pertinent concept or concepts (Copperman, Paragraph 0006).

Appellant also argued that *"There is no reason to believe that the "related features" (e.g., related terms or phrases) are part of a concept definition as recited in claims 1 and 15"* (Appellant's argument, page 14 of the brief, second paragraph) and that "*In particular, the recited concept list definition includes an origin concept and an evaluated concept and the evaluated concept, and a distance representing a strength of the relationship between the origin concept and the evaluated concept. However, there is nothing in Copperman that describes that the strength of a relationship between an origin concept and an evaluated concept is somehow received in conjunction with the related features"* (Appellant's argument, page 14 of the brief, third paragraph).

In response, it is again pointed out that Woods in view of Copperman teaches "a definition of concept list" (Woods, Figure 4, i.e., *Input search query 410*; Woods, Column 5 line 67 through Column 6 line 1, i.e., *a search query phrase (**consisting of one to many terms**) is input)* comprising an origin concept list comprising an origin concept, a relationship between the origin concept and an evaluated concept, and a distance representing a strength of the relationship between the origin concept and the evaluated concept" (Copperman, Paragraph 0132, i.e., *As an illustrative example,*

suppose that ***"TCP-IP"*** *is offered as a related feature 835 in a user session where* ***the Symptom concept node "can't connect"*** *and* ***the Object concept node "network"*** *have already been confirmed as relevant to the user query. In this example, the ranking of "TCP-IP" with respect to other displayed related features 835 is based on how often previous users selected the various related features when "can't connect" and "network" were already confirmed as concept nodes deemed relevant to the user session. In one implementation, each related feature, such as "TCP-IP", includes a list of confirmed concept nodes with which it has been previously presented. Each such confirmed concept node includes* ***an weight*** *or* ***other indicator*** *including information about how often* ***the particular related feature*** *was selected together with that particular confirmed concept node. For example,* ***the related feature "TCP-IP" would include a weight for "can't connect" and "TCP-IP," another weight for "network" and "TCP-IP", and similar weights for the other confirmed concept nodes with which the "TCP-IP" related feature 835 has previously been presented.*** *In this example, the ranking and/or display of the "TCP-IP" related feature 835 is based on such weights. Further description of suitable, use-based ranking techniques are described in the above-incorporated Copperman et al. U.S. patent application Ser. No. 09/944,636*; In the above example, "can't connect" and "network" are origin concepts. TCP/IP is the evaluated concept. Distance/weights between said concept nodes are illustrated Figure 2 of Copperman; Particularly note Paragraph 0037-0038, Figure 6, Paragraph 0061 of Copperman which teaches how said weights/relationships/distances are derived. Note that Woods also teaches a set of concepts defining relationships among said concepts (Woods, column 5 lines 7-14, i.e., *semantic network of terms and concepts* and *a*

variety of morphological, taxonomic, and semantic entailment ***relationships;*** *Woods,* column 5 lines 32-34, i.e., *relationships between more general and more specific terms)*).

Appellant argued that *"The rejection has consistently ignored the actual content of the requests for information and consistently ignored the fact that Copperman's knowledge map 200 is not in such requests for information"* (Appellant's argument, page 14 of the brief, last paragraph and that "*Thus, Woods and Copperman fail to describe or suggest receiving requests for information, or responding to such requests as those are recited in claims 1 and 15" (*Appellant's argument, page 17 of the brief, first paragraph). Similarly Appellant argued that "*However, claims 1 and 15 recite that a request for information includes a definition of a concept list that comprises an origin concept, a relationship between the origin concept and an evaluated concept, and a distance representing a strength of the relationship between the origin concept and the evaluated concept"* (Appellant's argument, page 17 of the brief, last paragraph).

In response, it is pointed out that Woods in view of Copperman, as cited repeatedly above teaches (1) requests for information (i.e., Woods) and (2) concept list comprising an origin concept, an evaluated, and the strength of relationship between those two concepts (i.e., Copperman). Appellant is reminded that the rejections are made under 35 U.S.C. 103 and, a such, applicant's claims in question are obvious over the "combination" of Woods in view of Copperman.

Referring to claim 47, Appellant argued that *"Applicant thus submits that Woods and Copperman also fail to describe or suggest receiving, from a user, a request for information that describes a combination of two or more concept list, where each*

concept list is defined by an origin concept, a relationship between the origin concept and an evaluated concept, a distance representing a strength of the relationship between the origin concept and the evaluated concept" (Appellant's argument, page 19 of the brief, third paragraph).

In response, it is pointed out that Woods in view of Copperman and further in view of Sacco teaches said limitations as follows: "*a combination of two or more concept list"* (Sacco, Column 2 Lines 5-8 and Column 8, Lines 15 through Column 3 Line 32), *where each concept list is defined by an origin concept, a relationship between the origin concept and an evaluated concept, a distance representing a strength of the relationship between the origin concept and the evaluated concept"* (Woods in view of Copperman as discussed above).

Lastly Appellant argued that *"Sacco does not render requests for information that describes a combination of two or more concept lists obvious to those of ordinary skill"* (Appellant's argument, page 20 of the brief, second paragraph).

In response, it is pointed out that at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Wood in view of Copperman to add the feature of using set operations on concepts, as taught by Sacco, to the method of Woods in view of Copperman so that, in the resultant method, the second concept would be the product of set operations on two or more concepts. One would have been motivated to do so in order to obtain *reduced taxonomy, which derived from the original taxonomy by pruning the concepts* (Sacco, Column 2 Lines 5-8).

In conclusion, for the above reasons, it is believed that the rejections should be sustained.

(11) Related Proceeding(s) Appendix

Copies of the court or Board decision(s) in the Related Appeals and Interferences section of this examiner's answer are provided herein.

The examiner's answer contains a new ground of rejection set for in the section **(9)** above. Accordingly, Appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution:** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFE 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 35 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) Maintain appeal. Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a

request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extension of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time t reply for ex parte reexamination proceedings.

Respectfully Submitted,

/dennis myint/
Dennis Myint
Examiner, AU-2162

A Technology Center Director or designee must personally approve the new ground(s) of rejection set for in section (9) above by signing below:

/Jack Harvey/
Director, Technology Center 2100

September 8, 2008

Conferences:

/John Breene/
Supervisory Patent Examiner
Art Unit 2162

/Vincent F. Boccio/ VFB
Primary Examiner, Art Unit 2169
Appeal Specialist TC 2100

John F. Conroy
Fish & Richardson P.C.
12390 E1 Camino Real
San Diego, California 92130